

C. SPIELMAN.
CONSECUTIVE NUMBERING MACHINE.

APPLICATION FILED SEPT. 23, 1908. RENEWED APR. 24, 1911.

1,007,314.

Patented Oct. 31, 1911.

2 SHEETS—SHEET 1.

Fig. 1.

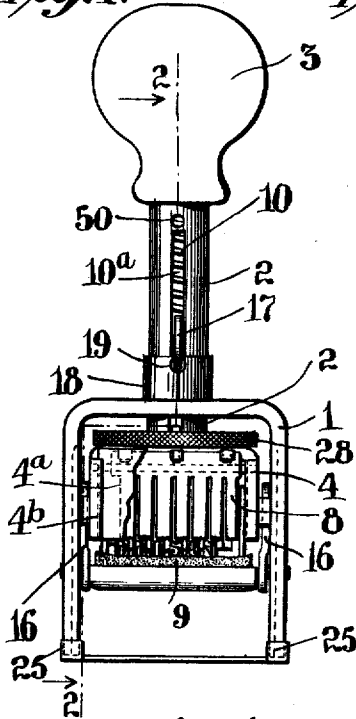


Fig. 2.

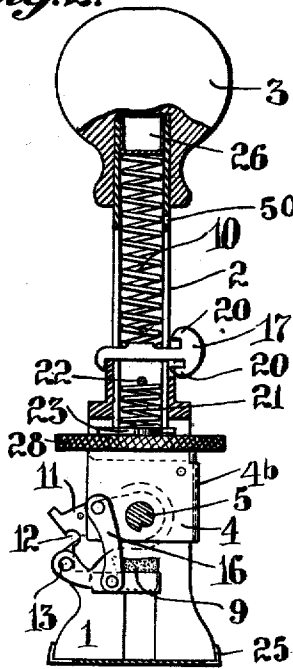


Fig. 3.

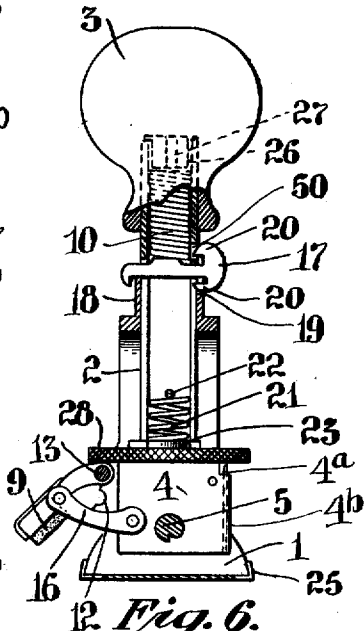


Fig. 4.

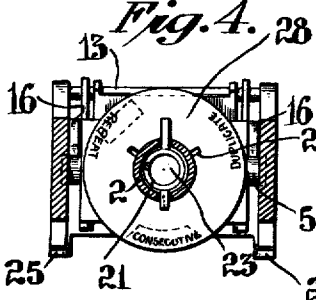


Fig. 5.

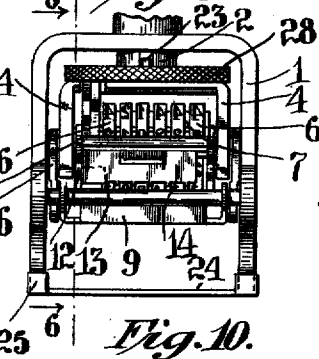


Fig. 6.

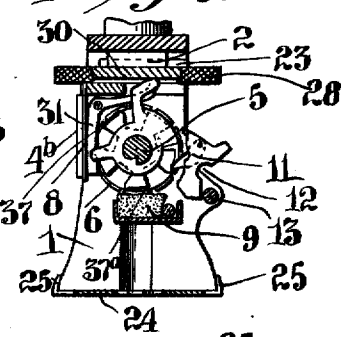


Fig. 7.

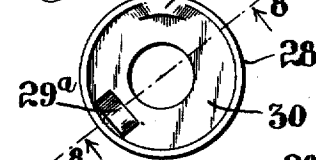


Fig. 10.

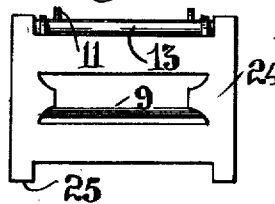


Fig. 11.

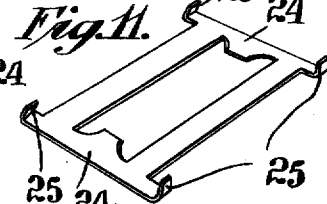


Fig. 8.

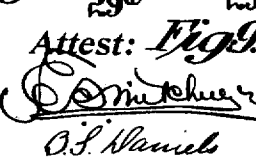


Fig. 9.



Fig. 12.



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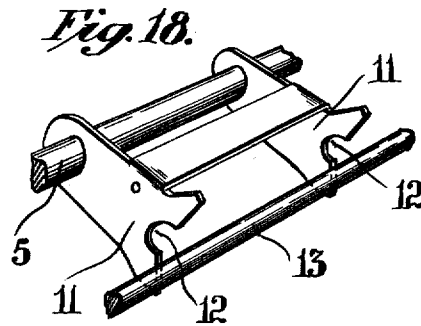
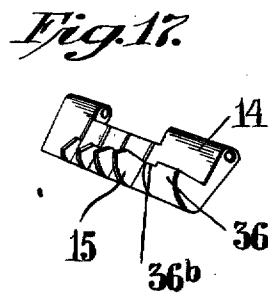
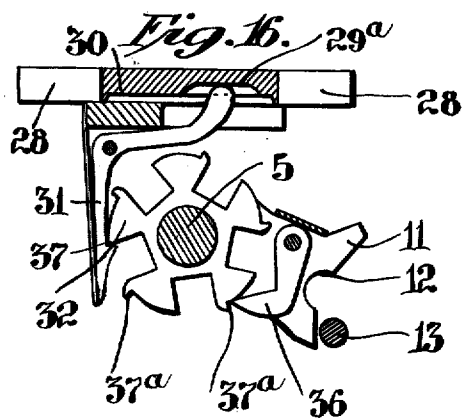
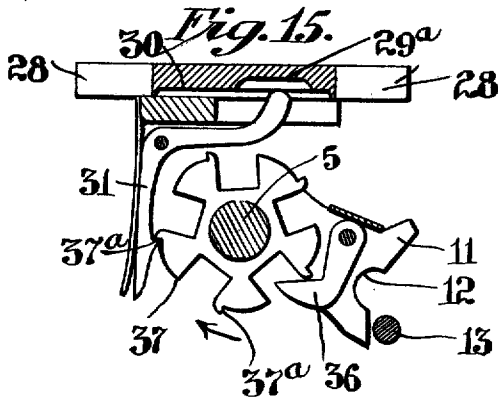
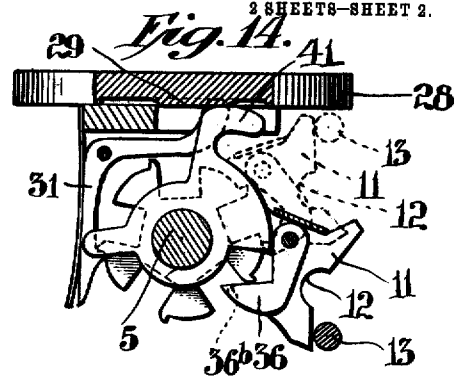
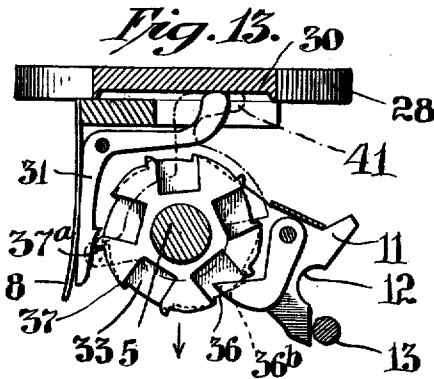
CONSECUTIVE NUMBERING MACHINE.

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2 SHEETS—SHEET 2.



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UNITED STATES PATENT OFFICE.

CHARLES SPIELMAN, OF BROOKLYN, NEW YORK.

CONSECUTIVE-NUMBERING MACHINE.

1,007,314.

Specification of Letters Patent.

Patented Oct. 31, 1911.

Application filed September 23, 1908, Serial No. 454,343. Renewed April 24, 1911. Serial No. 623,072.

To all whom it may concern:

Be it known that I, CHARLES SPIELMAN, a citizen of the United States, and residing at Brooklyn, county of Kings, and State of New York, have invented a certain new and useful Improvement in Consecutive-Numbering Machines, of which the following is a full, clear, and exact specification.

My improvements are such as to render the construction of a hand numbering machine very simple and cheap and by means of my invention these machines can be made with a much fewer number of parts than heretofore and they can also be constructed by means of my improvements with very few screws and pins.

Among the essential features of my improvements is an improved indicating dial by which the changes from consecutive to duplicate and repeat are very simply and accurately made and with a fewer number of parts than heretofore.

Another feature of my invention is an improved locking device to hold the machine in its lowermost position when the wheels are being cleaned or being changed by hand.

Another feature of my invention is an improved foot plate which is fastened on the machine by being clamped on and held in position without the use of screws or pins.

Still another improvement is the means of fastening the handle on to the machine.

Another and by far the most essential improvement is the means of operating the inking pad and operating pawls by a very simple and direct motion, doing away with a number of parts that have heretofore been necessary to accomplish this result in machines of this class.

Reference is had to the accompanying drawings which illustrate like parts of the invention.

Figure 1 represents a front view of the machine with the plate, on which is usually placed the name, partly broken away. Fig. 2 is a side sectional view taken on the line 2—2 Fig. 1. Fig. 3 is a side sectional view of the machine fastened in its lowermost position the numbering wheels being omitted in Fig. 3 for the purpose of simplifying the drawing. Fig. 4 is a top view of the improved indicating dial cam having the words consecutive, duplicate and repeat thereon. Fig. 5 is a rear view of the lower part of the machine showing the pawl block, the number wheels and the bar on which the

cam operating lever works. Fig. 6 is a sectional view of the machine taken on the line 6—6 of Fig. 5 showing the large ratchet wheel adjacent to the units wheel and the pawl block and cam lever. Fig. 7 is an underneath view of the cam indicating dial. Fig. 8 is a section detail view of the cam indicating dial taken on the lines 8—8 Fig. 7. Fig. 9 is a view of the device for holding the spring contained in the handle. Fig. 10 is a bottom view of the frame of the machine showing the foot plate and also the bar on which the cam operating lever works. Fig. 11 is a view of the foot plate detached. Fig. 12 is a view of the device for fastening the handle on to the tube carrying the spring. Fig. 13 is a view of the cam indicating dial and the ratchet wheel and pawl for operating the same when the machine is set to number consecutively. Fig. 14 is a view of the same parts with the machine set to repeat. Figs. 15 and 16 are views of the same parts set for duplicating numbers. Fig. 17 is a view of the operating pawl block carrying the operating pawls. Fig. 18 is a detailed view of the operating cam lever.

In the accompanying drawings 1 is the main frame of the machine. There is an opening or recess at the top of this frame through which opening slides a hollow tube 2 with a slot 10^a and having a handle 3. Attached to the lower end of this hollow tube is an inner frame 4. This inner frame 4 carries shaft 5 on which are mounted the numbering disks 6 having adjacent ratchet wheels 7. These ratchet wheels are held in position and kept from unnecessary rotation by spring 8.

9 indicates the inking pad which inks the numbering wheels as they are pressed down.

The frame 4 carrying the numbering wheels, shaft, etc., is held in its uppermost position as shown in Fig. 1 by a coiled spring 10 resting on the locking pin 17 in the tube and when the handle 3 is pressed down it carries the frame 4 containing the numbering and ratchet wheels down to the lowermost position shown in Fig. 3 until the wheels come into contact with the paper or matter to be numbered. Beneath this lock pin 17 is another and separate coiled spring 21 which is inserted for the purpose of holding the key 23 and dial 28 upon the frame 4 in a proper position. The upper end of this spring 21 strikes against a pin 22 passing through the tube 2 and the lower

end abuts against a key 23 a full drawing of which is shown in Fig. 9. This key 23 performs the triple function of holding the spring 21 in position and also holds the cam index dial down on the frame 4 and keeps it from being forced upward in its rotation and also registers the position of the cam index dial by the short end of plate 23 which is beveled on its under side as at 23^a fitting into registering grooves 23^b on the face of the cam index dial as will be hereinafter described.

One of the essential elements of my invention and the one that I consider shows a marked advance in the art is the means for operating the numbering wheels and inking pad as the handle is pressed down. Heretofore this result has been attained by devices more or less complicated and requiring a number of parts, screws, links, etc. In my invention I attain this result by means of an operating cam lever 11 as fully shown in Fig. 2, and a detailed view of which is shown in Fig. 18. This operating cam lever is rectangular in form and carries the operating pawl block 14 with operating pawls 15 and 36 which is attached to it, and is mounted on the shaft 5 which carries the numbering disks, and the front of said operating cam lever has an indentation 12. As the inner frame 4 carrying the shaft, numbering wheels and the operating cam lever is moved downward by the operator pressing on the handle, the recess 12 in the face of the cam 11 comes in contact with the bar 13 pivoted on the rear of the machine. This contact of the cam operating lever 11 with the rod 13, during the downward movement of the frame 4, causes the operating pawl teeth 15 which are of varying lengths and integral with the pawl block 14, to co-act with the ratchets of the numbering wheels and turn the wheels either to number consecutively or repeat according as the cam dial is set as will be more fully described hereafter. The operating lever 11 is always in contact with the rod 13 and the lever is thus prevented from being excessively oscillated. The inking pad 9 is pivotally connected to and swings on the rod 13 heretofore mentioned and also has a link 16 pivoted to the inking pad which is in turn pivoted to the wheel carrier or inner frame 4, and on the downward movement of the frame 4 carrying the wheels etc., this link 16 is caused to swing the inking pad 9 back and away from and free from the numbering wheels as shown in Fig. 3. I thus have a positive and direct connection between the means or force which carries the inner frame with the wheels downward and the operating pawls with but few parts and no links or screws.

Another feature of my invention is the means of holding the inner frame 4 which carries the shaft, wheels, etc. in a locked or

lowermost position shown in Fig. 3. It frequently becomes necessary to fasten the wheels in this position both for the purpose of cleaning and also for the purpose of changing or setting the wheels when required. I accomplish this result in the following manner. In the handle tube as heretofore stated is contained the coiled spring 10. This tube 2 is slotted and through this slot extends a locking key 17, as shown in Figs. 2 and 3. On the frame 1 and around the opening for a short distance and above same is a collar or boss 18 having a hole 19 in one side. The tube 2 has a hole 50 passing through it a short distance above the slot 10^a. The locking pin 17 is somewhat longer than the diameter of the tube 2 and is made with a flange having teeth 20 which are a little smaller than the holes 19 and 50. When the machine is in its uppermost position and when it is being operated as shown in Figs. 1 and 2, the locking device 17 is pushed outward from the boss 18 so that the teeth 20 do not enter the slot in the tube 2. (See Fig. 2.) When it is desired to lock the machine in the lowermost position all that is necessary to be done is to press the handle down so that the frame 4 is in the position shown in Fig. 3 and then with the thumb or finger press the locking pin 17 inwardly so that the teeth 20 enter the holes 19 and 50 in the boss and tube and hold the frame in the lowermost position.

Another feature of my invention is the foot plate 24 shown in Fig. 11. This foot plate is made of a stamped out piece of steel or similar metal with the ends 25 bent upward and over so that the foot plate will clamp on the bottom of the frame 1 and be retained there without the necessity of drilling holes through the foot plate 24 and screwing it on to the base of the frame as has been done heretofore.

Another feature of my invention is the means of fastening the handle 3 which is made of wood or similar material on to the hollow tube 2. The device for doing this is shown in Fig. 12 and consists of a cone shaped circular piece of metal 26. The tube 2 which is made of thin metal has at the top four slots 27 cut a short distance down say a half an inch or less from the top. Heretofore the handle 3 has been secured on the tube by means of a thread cut on the tube and a corresponding thread cut in the handle. This is apt to wear off and the thread become loose. By means of my invention the handle can be simply pushed on and the harder it is pushed on the firmer it will stay in position. This result is accomplished by having the slots 27 as shown in Fig. 8 cut in the top of the tube and the cone shaped piece of metal forced in between the inner sides of the tube 2 and the coiled spring 10 and then the handle placed

over the same and forced down. As the cone shaped piece of metal 26 is forced down into the tube 2 it serves to spread apart the upper portion of the tube 2 and the handle 3 is thus jammed on to the tube 2 very firmly and can not be pulled off.

Another and one of the most important features of my invention is the means for making the changes from consecutive to duplicate and duplicate to repeat. This is accomplished by means of the cam index dial 28, the top or plan view of which is shown in Fig. 4 and the underneath view showing the projection and indentation is shown in Fig. 7. This cam dial has the words consecutive, duplicate and repeat cut on the top or face so that the words are always apparent to the user of the machine when he looks down and can be seen or adjusted from the top without lifting up the machine as has been necessary heretofore. This cam dial index has a lug or projection 29 and a recess 29^a and a flat surface 30.

Fig. 13 shows the cam indicating dial 28 set for consecutive numbering. In this position the spring pressed pawl 31 rests upon the flat portion 30 of the underside of 28 and is held against the spring action so as to be held back from pressing against the main portion of the periphery line of the mutilated wheel 32 and be held from entering the deep notches or mutilations in such wheel. As the pawl 36 falls into a deep cut in wheel 32 such pawl falls into permanent engagement with the ratchet wheel 33 of the numbering wheel series. As the pawl 36 is thus allowed to remain in continuous engagement with the ratchet wheel 33 such pawl at each throw takes into the teeth of such ratchet 33 for consecutive rotation or numbering. The pawl 36 engages the ratchet wheel 33 along the portion or indentation of the pawl indicated at 36^b Fig. 17. The deep cuts in wheel 32 are shown located between the periphery line or teeth 37 and the teeth 37^a of said wheel. It will be understood that when the pawl 36 is in the position shown in Fig. 13, it will give oscillating movement to the mutilated wheel 32 or in other words on the downward stroke of the handle 2, the pawl 36 will strike against the lower wall of the cut and move the wheel 32 a slight distance, then on the return stroke the pawl will move back and strike the opposite wall of the same cut, thus oscillating the mutilated wheel back to its initial position. This oscillation of the wheel 32, is smaller than the distance between two of the teeth 37^a and is lost motion.

Fig. 14 shows the dial set for repeating. In this position the cam 29 comes into engagement with the cam pawl 41 forcing it downwardly and into the path of the pawl 36 as it oscillates. Such cam 41 pressing

on the pawl 36 and on its shank holds the point of the pawl or its portion 36^b sufficiently elevated to avoid engagement with the ratchet wheel 33. The pawl is thus held by cam 41 sufficiently clear of action allowing it to skip the ratchet wheel on the unit disk thereby giving this a repetition of the number.

Figs. 15 and 16 show two views of the dial set for duplication. In Fig. 15 the cam recess 29^a of the dial is over the pawl 31 but the deep tooth ratchet 32 is in the same position as shown in Fig. 13. On the backstroke of the pawl block carrying frame the large pawl 36 comes into engagement with the outermost tooth 37^a of the ratchet 32 and moves it in the direction of the arrow on the forward stroke until the pawl 31 springs into engagement with the tooth 37 thereby allowing the pawl 31 to enter the recess in the dial as shown in Fig. 16. On the next operation the dog 36 enters the deep tooth or cut in the ratchet 32 carrying it around until the tooth 37^a has come into engagement with the pawl 31. In this operation it will be seen that the recess pawl 36^b actuating the ratchet on the unit dial has moved only once in two operations thereby causing the machine to duplicate.

Another feature of my invention is a means for fastening the name plate 4^a on to the frame 4. This plate 4^a which is shown partly broken away in Fig. 1 performs the double function of protecting the comb springs and units and ratchet wheels from dust, dirt, etc., and also can be used as a name plate on which to engrave the name of machine makers or any other description that may be desired. This plate is thus slipped into position and securely held there by these overhanging lips 4^b and is rigidly and permanently secured to the machine without the necessity of any screws or pins. The plate instead of being screwed on slides under an overhanging lip 4^b formed on the wheel carrying frame 4.

I do not wish to be confined to the precise form of construction shown in the drawings and specification in this application but lay claim broadly to all the equivalents of the various improvements made by me.

Having described my invention what I claim and desire to secure by Letters Patent of the United States is the following:

1. In combination a main frame and an inner frame made to reciprocate therein and provided with a shaft with number and ratchet wheels and with a pawl carrying lever having a pawl engaging the ratchet wheels, said lever being fulcrumed on the shaft in the inner reciprocating frame, a rod fixed on the rear of the main frame clear of the inner frame, an inking

pad pivoted on the fixed rod, a link pivoted to the pad and to the reciprocating frame the free end of the pawl carrying lever being made to engage the fixed rod so that the reciprocations of the inner frame will cause the fulcrum end of the pawl carrying lever to be swung so that the pawl carrying lever will actuate its pawl to rotate the wheels and the inner reciprocating frame will also cause the link to draw the pad under the inner reciprocating frame to contact with the wheels.

2. In combination in a hand numbering machine a main frame, and an inner movable frame with numbering and ratchet wheels carried thereby, a ratchet wheel engaging pawl with an operating lever fulcrumed in the movable frame, a cross bar fixed in the main frame in the path of the pawl operating lever, a mutilated wheel on the shaft of the numbering and ratchet wheels and arranged to hold back the lever operated pawl at suitable intervals, a spring pressed pawl for engaging the mutilated wheel, and an upwardly facing index dial on the movable frame and above the movable frame and having downwardly facing projections made to engage the spring pressed pawl to hold the same against the action of its spring away from the mutilated wheel.

3. In combination in a numbering machine consisting of a main frame an inner frame carrying the numbering and ratchet

wheels, a tubular slotted handle connected to the inner frame, a key in said tubular slotted handle, a cam index dial, recesses in said cam index dial with which the key in the tubular slotted handle co-acts, a pin in said tubular handle and a coiled spring between the key and said pin.

4. In combination in a hand numbering machine comprising an outer supporting frame, a handle, an inner frame connected to the handle and carrying the shaft on which are mounted the numbering and ratchet wheels, an operating lever mounted on said shaft, a bar fixed across the outer frame in the path of the operating lever, a visibly indicating cam index dial made to face upwardly and to rotate around the handle and having the words "consecutive", "duplicate" and "repeat" cut thereon, and a cam in the inner frame, a pawl fulcrumed in the inner frame set with respect to the cam by the dial and a mutilated wheel engaged by the pawl, said dial and pawl with the mutilated wheel and cam forming means for making the changes from "consecutive" to "duplicate" and "repeat."

In witness whereof I have hereunto set my signature in the presence of two attesting witnesses this 2nd day of September 1908.

CHARLES SPIELMAN.

Witnesses:

JOHN H. FOSTER,
ALBERT W. HAIGHT.